Kentucky
UNBRIDLED SPIRIT
Cabinet for Economic Development

Climate in Kentucky

Kentucky's location in the southeast interior U.S. produces a moderate climate. The state's weather systems are associated with cyclic movement of the jet stream. Winter and spring weather are dominated by low pressure, including both cold and warm fronts, bringing cloudy, cool, and sometimes wet days. In winter, an occasional high-pressure system dips southward from Canada bringing cold, clear and dry conditions to the state and region. The jet stream moves northward in summer and fall and the state is dominated by high-pressure. Clockwise airflow around this high-pressure system results in warm, humid summers as air flows up the Mississippi and Ohio Valleys from the south. The prevalent wind direction is from the south-southwest with typically light surface winds.

Temperature

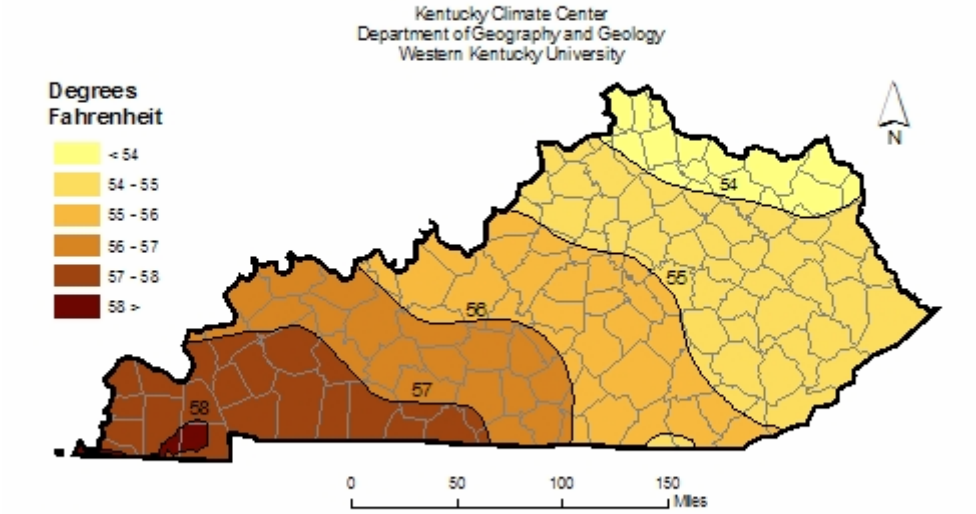
Temperatures in Kentucky are normally at the lowest in January and highest in July. Latitude and elevation influence mean annual temperatures in the state. The highest temperatures usually occur in extreme western Kentucky at the lower elevations. The lowest temperatures occur along the upland Ohio and West Virginia borders. Thirty-year averages of mean annual temperatures throughout Kentucky vary with a maximum of 60°F for Gilbertsville in the west and a minimum of 53°F for Ashland in the east. Extremely cold or hot temperatures are rare. The growing season follows a similar pattern to temperature patterns geographically, extending from under six months in eastern Kentucky to nearly seven months in western Kentucky.

Heating degree days (the number of degrees the daily average temperature falls below a base temperature, usually 65°F) are an index of "cold." The number of heating degree days is calculated for each day by subtracting the day's mean temperature from 65°F. The mean heating degree days for the heating year vary from about 4,000 in extreme southwest Kentucky to about 5,000 annual heating degree days in northeast Kentucky. Heating degree days may be used as a crude measure of heating requirements. Cooling degree days are the number of degrees the daily average temperature exceeds 65°F. Cooling degree days range from 1,400 in western Kentucky to 1,000 to the northeast. Cooling degree days may be used as a crude measure of air conditioning requirements.

Precipitation

Kentucky receives about 46 inches of precipitation annually. Although precipitation is distributed fairly evenly throughout the year, most of the state experiences a spring maximum and fall minimum. The annual distribution of precipitation is typically in phase with the temperature fluctuations during the summer months. The precipitation maximum normally occurs in the same month as the temperature maximum, often in July. Western Kentucky, however, exhibits a March precipitation maximum. Eastern Kentucky shows a July precipitation maximum with a strong secondary peak in March. October is usually the driest month in the state. Kentucky receives about twelve inches of snowfall annually, but most winter precipitation falls as rain, drizzle, or sleet.

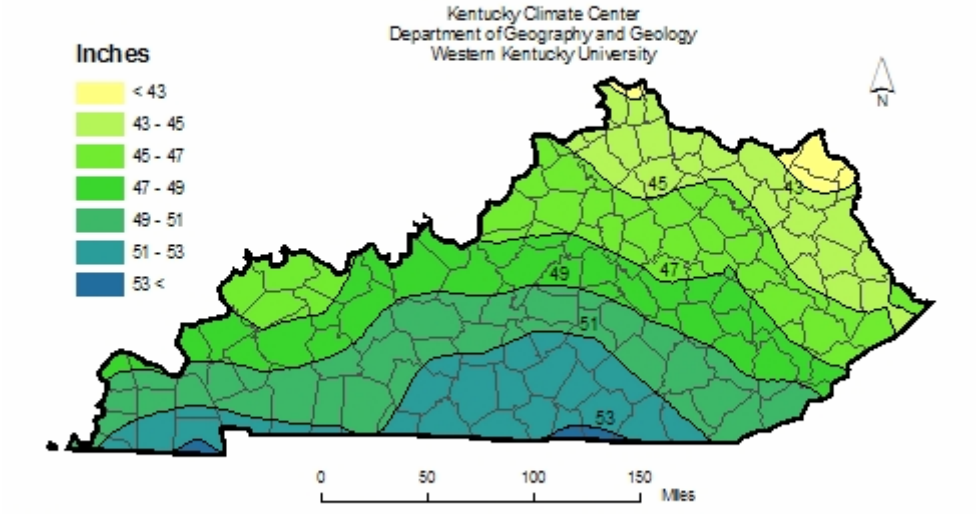
Annual Mean Temperature
1971-2000



Note: Contours are based on a local polynomial interpolator. The actual value for a given climate station may differ slightly from the interpolated value at that location.

Source: NCDC/NESDIS/NOAA, Climatography of the United States No. 81: Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days, 1971-2000.

Annual Mean Precipitation
1971-2000



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Sources: Atlas of Kentucky, University Press of Kentucky, 1998.
Kentucky Climate Center at Western Kentucky University. **http://kyclim.wku.edu/**

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